UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,351	01/30/2004	Norihiro Hara	16869P-096600US	8355

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EXAMINER
AHLUWALIA, NAVNEET K

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/769,351	HARA ET AL.
	Examiner	Art Unit	
	Navneet K. Ahluwalia	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2004*.

2a)☐ This action is **FINAL**.　　　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/30/2004*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   The application has been examined. Claims 1 – 33 are pending in this office

action.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claims 4 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

4.   Regarding claims 4 and 15, the element ring is claimed but is vague and

indefinite because it is unclear from the claim and the specification as what is the ring

and what is its purpose and is cited only once in the specification and is not explained.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

6.   Claims 1 – 3, 5 – 14 and 16 – 33 rejected under 35 U.S.C. 102(b) as being

anticipated by Cotner et al. ('Cotner' herein after) (US 6,247055 B1).

With respect to claim 1.

Cotner discloses a method for processing databases in a system which includes

a plurality of storage areas each storing a database and a plurality of computers each

having a database management program running thereon which manages one of said

plurality of storage areas, each said storage area being associated with only said

computer managing said storage area, said method comprising:

- when a failure has occurred in one of said plurality of computers as a failed

    computer, obtaining preset substitution information indicating that the storage

    area managed by the database management program running on said failed

    computer is to be managed by the database management program running

    on another one of said plurality of computers as a substitute computer (Figure

    2, column 2 lines 60 – 67 and column 3 lines 1 – 9, Cotner); and

- based on said substitution information, changing association of said storage

    area with said failed computer to said substitute computer, said storage area

    to be managed by said database management program running on said

    substitute computer (Figures 3 and 4, column 4 lines 60 – 67 and column 5

    lines 1 – 6, Cotner).

With respect to claim 2,

Cotner discloses the method as recited in claim 1, wherein said substitution

information includes association information associating an identifier of said database

management program running on said failed computer with an identifier of said

database management program running on said substitute computer, said substitution

information indicating that said storage area managed by said database management

program running on said failed computer is to be managed by said database

management program running on said substitute computer when a failure occurs (the

resync port number is pre assigned and this is similar to the unique identifier of the

substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 3,

Cotner discloses the method as recited in claim 2, wherein said substitution

information comprises a mutual substitution configuration in which two of the computers

are associated with one another whereby one of the two computers is a substitute

computer for the other of the two computers as a failed computer mutually (column 5

lines 22 – 34, Cotner).

With respect to claim 5,

Cotner discloses the method as recited in claim 2, wherein said substitution

information comprises an n-to-1 substitution configuration whereby one of the

computers is a substitute computer for n of the computers as failed computers (as

shown in Figure 5 and column 5 lines 30 – 37 explain that the resync port number is

matched to a list and it would be inherently possible that more than one system could

have the same resync number, Cotner).

With respect to claim 6,

Cotner discloses the method as recited in claim 1, wherein said substitution

information includes a plurality of pieces of association information each associating an

identifier of said database management program running on said failed computer, an

identifier of the database management program running on one of a plurality of

substitute computers, and priority information indicating a priority with one another, said

substitution information indicating that said storage area managed by said database

management program running on said failed computer is to be managed by said

database management program running on one of said substitute computers selected

according to said priority information (column 5 lines 7 – 37, Cotner).

With respect to claim 7,

Cotner discloses the method as recited in claim 1, further comprising taking over

processing from said failed computer by said substitute computer based on said

substitution information (column 3 lines 3 – 9, Cotner).

With respect to claim 8,

Cotner discloses a method for processing a database in a database

management system which divides said database into a plurality of sub-databases and

associates each sub-database with one of a plurality of database servers to process

data, said method comprising (column1 lines 41 – 61, Cotner):

- if one of said plurality of database servers is found to have failed as a failed

database server when a request for processing is made to said failed

database server, obtaining an identifier of another one of said plurality of

database servers as a substitute database server which is to take over said

processing from said failed database server based on information on

substitution relations between said plurality of database servers, and

switching from said failed database server to said substitute database server

for receiving said request for said processing (Figure 2, column 2 lines 60 –

67 and column 3 lines 1 – 9, Cotner);

- wherein said information on substitution relations between said plurality of

database servers indicating which one of said plurality of database servers is

used as a substitute database server if one of the other database servers fails

is stored beforehand (Figures 3 and 4, column 4 lines 60 – 67 and column 5

lines 1 – 6, Cotner).

With respect to claim 9,

Cotner discloses the method as recited in claim 8, further comprising: receiving

said request to which a substitution instruction based on said information on substitution

relations has been added upon a failure of said failed database (column 3 lines 1 – 9,

Cotner); and recognizing said substitution instruction and performing said processing in

place of said failed database server based on said recognized substitution instruction

(the resync port number is pre assigned and this is similar to the unique identifier of the

substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 10,

Cotner discloses the method as recited in claim 9, further comprising, before

performing said processing in place of said failed database server, changing an

execution environment of said substitute database server to an execution environment

of said failed database server, said substitute database server taking over said

processing (column 8 lines 36 – 51, Cotner).

With respect to claim 11,

Cotner discloses the method as recited in claim 9, wherein performing said

processing in place of said failed database server comprises using a database buffer of

the substitute computer for accessing a database storage area, a table, or an index

associated with said failed database server (where the list could be an index in column

8 lines 36 – 42 and in Figure 5 element 215 is a table that has the resync numbers,

Cotner).

With respect to claim 12,

Cotner discloses a system for processing databases, said system comprising:

- a plurality of storage areas each storing a database (Figure 1, Cotner); and

- a plurality of computers each having a database management program

   running thereon which manages one of said plurality of storage areas, each

said storage area being associated with only said computer managing said

storage area (Figure 2 and column 1 lines 41 – 62, Cotner);

- wherein each computer includes a substitution control section configured,

when a failure has occurred in one of said plurality of computers as a failed

computer, to obtain preset substitution information indicating that the storage

area managed by the database management program running on said failed

computer is to be managed by the database management program running

on another one of said plurality of computers as a substitute computer (Figure

2, column 2 lines 60 – 67 and column 3 lines 1 – 9, Cotner); and, based on

said substitution information, to change association of said storage area with

said failed computer to said substitute computer, said storage area to be

managed by said database management program running on said substitute

computer (Figures 3 and 4, column 4 lines 60 – 67 and column 5 lines 1 – 6,

Cotner).

With respect to claim 13,

Cotner discloses the system as recited in claim 12, wherein said substitution

information includes association information associating an identifier of said database

management program running on said failed computer with an identifier of said

database management program running on said substitute computer, said substitution

information indicating that said storage area managed by said database management

program running on said failed computer is to be managed by said database

management program running on said substitute computer when a failure occurs (the

resync port number is pre assigned and this is similar to the unique identifier of the

substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 14,

Cotner discloses the system as recited in claim 13, wherein said substitution

information comprises a mutual substitution configuration in which two of the computers

are associated with one another whereby one of the two computers is a substitute

computer for the other of the two computers as a failed computer mutually (column 5

lines 22 – 34, Cotner).

With respect to claim 16,

Cotner discloses the system as recited in claim 13, wherein said substitution

information comprises an n-to-1 substitution configuration whereby one of the

computers is a substitute computer for n of the computers as failed computers (as

shown in Figure 5 and column 5 lines 30 – 37 explain that the resync port number is

matched to a list and it would be inherently possible that more than one system could

have the same resync number, Cotner).

With respect to claim 17,

Cotner discloses the system as recited in claim 12, wherein said substitution

information includes a plurality of pieces of association information each associating an

identifier of said database management program running on said failed computer, an

identifier of the database management program running on one of a plurality of

substitute computers, and priority information indicating a priority with one another, said

substitution information indicating that said storage area managed by said database

management program running on said failed computer is to be managed by said

database management program running on one of said substitute computers selected

according to said priority information (column 5 lines 7 – 37, Cotner).

With respect to claim 18,

Cotner discloses the system as recited in claim 12, wherein the substitution

control section of said substitute computer is configured to take over processing from

said failed computer based on said substitution information (column 3 lines 3 – 9,

Cotner).

With respect to claim 19,

Cotner discloses a system for processing databases, said system comprising:

-   a plurality of storage areas each storing a database (Figure 1, Cotner); and

-   a plurality of computers each having a database management program

    running thereon which manages one of said plurality of storage areas, each

    said storage area being associated with only said computer managing said

    storage area (Figure 2 and column 1 lines 41 – 62, Cotner);

- wherein each computer includes a substitution control section configured, if

    one of said plurality of database servers is found to have failed as a failed

    database server when a request for processing is made to said failed

    database server, to obtain an identifier of another one of said plurality of

    database servers as a substitute database server which is to take over said

    processing from said failed database server based on information on

    substitution relations between said plurality of database servers, and

    switching from said failed database server to said substitute database server

    for receiving said request for said processing (Figure 2, column 2 lines 60 –

    67 and column 3 lines 1 – 9, Cotner); and

- wherein said information on substitution relations between said plurality of

    database servers indicating which one of said plurality of database servers is

    used as a substitute database server if one of the other database servers fails

    is stored beforehand (Figures 3 and 4, column 4 lines 60 – 67 and column 5

    lines 1 – 6, Cotner).

With respect to claim 20,

Cotner discloses the system as recited in claim 19, further comprising a

communications control apparatus configured to receive said request to which a

substitution instruction based on said information on substitution relations has been

added upon a failure of said failed database (Figure 3 and 4, Cotner); and wherein said

substitution control section is configured to recognize said substitution instruction and

perform said processing in place of said failed database server based on said

recognized substitution instruction (the resync port number is pre assigned and this is

similar to the unique identifier of the substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 21,

Cotner discloses the system as recited in claim 20, wherein said substitution

control section is configured to change an execution environment of said substitute

database server to an execution environment of said failed database server before

performing said processing in place of said failed database server (column 8 lines 36 –

51, Cotner).

With respect to claim 22,

Cotner discloses the system as recited in claim 20, wherein said substitution

control section is configured to use a database buffer of the substitute computer for

accessing a database storage area, a table, or an index associated with said failed

database server (where the list could be an index in column 8 lines 36 – 42 and in

Figure 5 element 215 is a table that has the resync numbers, Cotner).

With respect to claim 23,

Cotner discloses the system as recited in claim 20, further comprising a

processing request receiving device configured, if one of said plurality of database

servers is found to have failed as a failed database server when a request for

processing is made to said failed database server, to add a substitution instruction to

said request for processing based on said information on substitution relations, before

sending said request for processing to said computers (column 7 lines 29 – 47, Cotner).

With respect to claim 24,

Cotner discloses a computer readable medium storing a program for processing

databases in a system which includes a storage area storing said database and a

plurality of computers each having a database management program running thereon

which manages said storage area, each said storage area being associated with only

said computer managing said storage area, the program comprising:

- code for, when a failure has occurred in one of said plurality of computers as

  a failed computer, obtaining preset substitution information indicating that the

  storage area managed by the database management program running on

  said failed computer is to be managed by the database management program

  running on another one of said plurality of computers as a substitute

  computer (Figure 2, column 2 lines 60 – 67 and column 3 lines 1 – 9, Cotner);

  and

- code for, based on said substitution information, changing association of said

  storage area with said failed computer to said substitute computer, said

  storage area to be managed by said database management program running

  on said substitute computer (Figures 3 and 4, column 4 lines 60 – 67 and

  column 5 lines 1 – 6, Cotner).

With respect to claim 25,

Cotner discloses the program as recited in claim 24, wherein said substitution information includes association information associating an identifier of said database management program running on said failed computer with an identifier of said database management program running on said substitute computer, said substitution information indicating that said storage area managed by said database management program running on said failed computer is to be managed by said database management program running on said substitute computer when a failure occurs (the resync port number is pre assigned and this is similar to the unique identifier of the substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 26,

Cotner discloses the program as recited in claim 24, wherein said substitution information includes a plurality of pieces of association information each associating an identifier of said database management program running on said failed computer, an identifier of the database management program running on one of a plurality of substitute computers, and priority information indicating a priority with one another, said substitution information indicating that said storage area managed by said database management program running on said failed computer is to be managed by said database management program running on one of said substitute computers selected according to said priority information (column 5 lines 7 – 37, Cotner).

With respect to claim 27,

Cotner discloses the program as recited in claim 24, further comprising code for

taking over processing from said failed computer by said substitute computer based on

said substitution information (column 3 lines 3 – 9, Cotner).

With respect to claim 28,

Cotner discloses the program as recited in claim 27, further comprising: code for

receiving said request to which a substitution instruction based on said information on

substitution relations has been added upon a failure of said failed database (Figure 3

and 4, Cotner); and code for recognizing said substitution instruction and performing

said processing in place of said failed database server based on said recognized

substitution instruction (the resync port number is pre assigned and this is similar to the

unique identifier of the substitute computer, column 5 lines 7 – 37, Cotner).

With respect to claim 29,

Cotner discloses the program as recited in claim 28, further comprising code for,

before performing said processing in place of said failed database server, changing an

execution environment of said substitute database server to an execution environment

of said failed database server, said substitute database server taking over said

processing (column 8 lines 36 – 51, Cotner).

With respect to claim 30,

Cotner discloses the program as recited in claim 28, wherein said code for performing said processing in place of said failed database server comprises code for using a database buffer of the substitute computer for accessing a database storage area, a table, or an index associated with said failed database server (where the list could be an index in column 8 lines 36 – 42 and in Figure 5 element 215 is a table that has the resync numbers, Cotner).

With respect to claim 31,

Cotner discloses a system for processing databases, said system comprising:
- a plurality of storage areas each storing a database (Figure 1, Cotner);
- a plurality of computers each having a database management program running thereon which manages one of said plurality of storage areas, each said storage area being associated with only said computer managing said storage area (Figure 2 and column 1 lines 41 – 62, Cotner); and
- a management system coupled with the plurality of computers (Figure 2, Cotner);
- wherein the management system is configured to determine whether a failure has occurred in one of said plurality of computers as a failed computer; and, if a failure has occurred, to obtain preset substitution information indicating that the storage area managed by the database management program running on

said failed computer is to be managed by the database management program

running on another one of said plurality of computers as a substitute

computer (Figure 2, column 2 lines 60 – 67 and column 3 lines 1 – 9, Cotner);

and

- wherein each computer is configured, when a failure has occurred in one of

said plurality of computers as a failed computer, to obtain the preset

substitution information from the management system; and, based on said

substitution information, to change association of said storage area with said

failed computer to said substitute computer, said storage area to be managed

by said database management program running on said substitute computer

(Figures 3 and 4, column 4 lines 60 – 67 and column 5 lines 1 – 6, Cotner).

With respect to claim 32,

Cotner discloses the system as recited in claim 31, wherein said management

system is configured to send a request for processing including accessing a storage

area; and wherein, if the computer associated with the storage area to be accessed is

the failed computer, the management system is configured to add a substitution

instruction to the request based on said preset substitution information (column 7 lines

29 – 47, Cotner).

With respect to claim 33,

Cotner discloses the system as recited in claim 32, wherein said substitute

computer is configured, upon receiving said request from said management system with

said substitution instruction, to change an execution environment of said substitute

computer to an execution environment of said failed computer before performing said

processing in place of said failed computer (column 8 lines 36 – 51, Cotner).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

9.   Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Cotner et al. ('Cotner' herein after) (US 6,247055 B1) as applied to claims 1 – 3, 5 – 14

and 16 – 33 above, and further in view of Graham Bromley ('Bromley' herein after) (US 2004/0039756 A1).

With respect to claim 4,

Cotner disclose the method as recited in claim 2, wherein said substitution information comprises a unidirection ring substitution configuration in which a group of the computers from a first computer to a last computer are associated with each other in a unidirection ring manner whereby a first computer is a substitute computer for a second computer which is a substitute computer for a third computer, and the last computer is a substitute computer for the first computer (column 5 lines 17 – 33, Cotner).

Cotner however does not explicitly disclose the unidirection ring substitution as claimed.

Bromley teaches the unidirection ring used to interconnect systems in Figure 1.

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both the references are in the same field of networking and system failure remedies. Furthermore, Bromley discloses with the ring to connect the systems there would be significant amount of storage capacity at its disposal (paragraph 0016, Bromley) and it would reduce the amount of network file replication (paragraph 0011, Bromley).

With respect to claim 15,

Cotner disclose the system as recited in claim 13, wherein said substitution information comprises a unidirection ring substitution configuration in which a group of the computers from a first computer to a last computer are associated with each other in a unidirection ring manner whereby a first computer is a substitute computer for a second computer which is a substitute computer for a third computer, and the last computer is a substitute computer for the first computer (column 5 lines 17 – 33, Cotner).

Cotner however does not explicitly disclose the unidirection ring substitution as claimed.

Bromley teaches the unidirection ring used to interconnect systems in Figure 1.

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both the references are in the same field of networking and system failure remedies. Furthermore, Bromley discloses with the ring to connect the systems there would be significant amount of storage capacity at its disposal (paragraph 0016, Bromley) and it would reduce the amount of network file replication (paragraph 0011, Bromley).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navneet K. Ahluwalia whose telephone number is 571-272-5636. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam T. Hosain can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Navneet K. Ahluwalia
Examiner
Art Unit 2166

MOHAMMAD ALI
PRIMARY EXAMINER

Dated: 08/01/2006